Startling new research from the man who "talks" to plants

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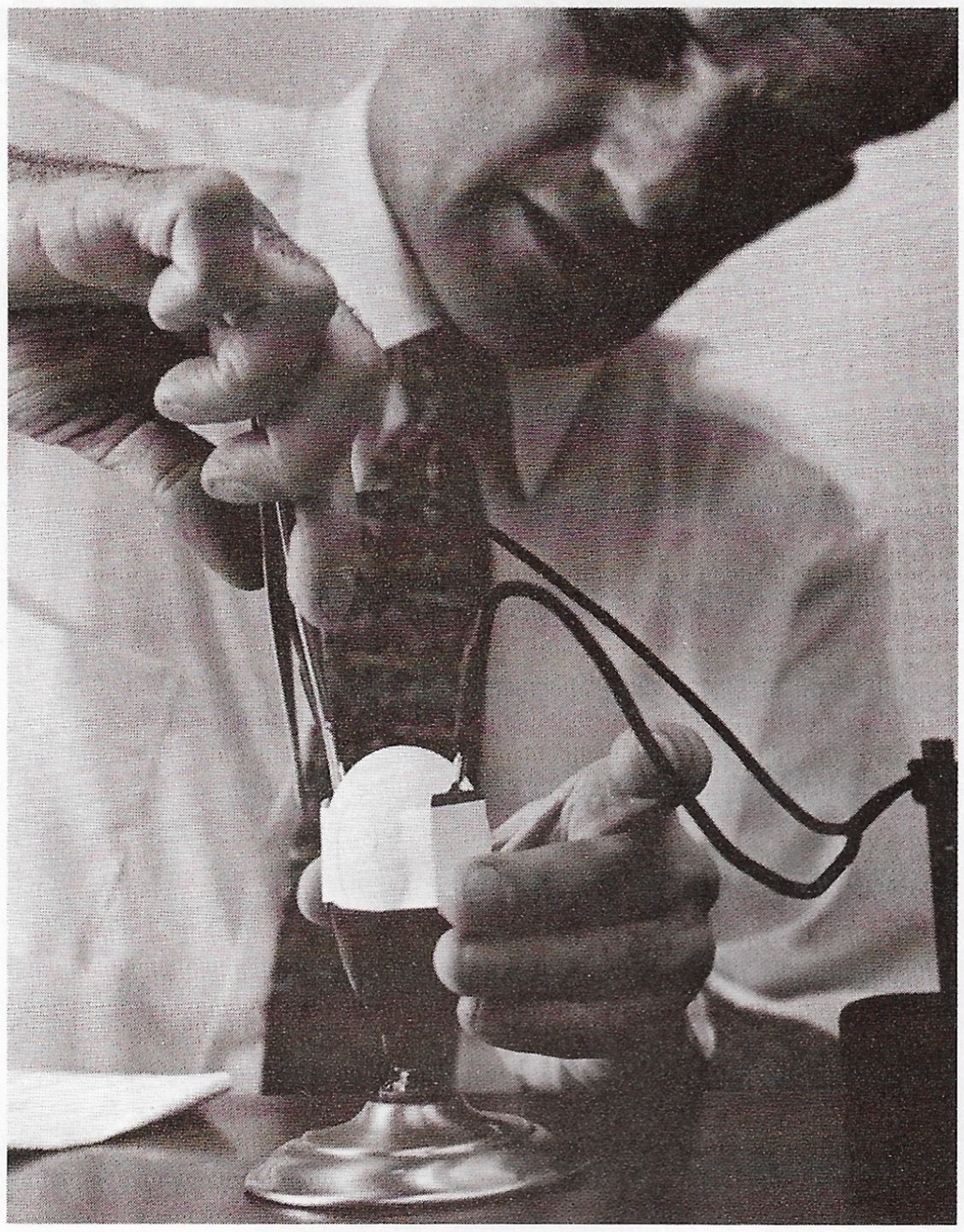
YOU MAY RECALL the name Cleve Backster. It belongs to the man who attached a lie-detector to the leaf of a plant and got the surprise of his life. The plant showed reactions similar to those of a human being. In subsequent experiments, Backster discovered that plants are hooked into some kind of telepathic communication system and that they are highly sensitized to people, to the destruction of animal life and to threats to their own well-being.

NATIONAL WILDLIFE published the first account of Mr. Backster's findings (February-March 1969, pages 4-8), and the article attracted worldwide attention. Secretaries and housewives began talking to their plants and treating them

"Backster leans over backward to follow scientific methodology"



Whether he is experimenting with plants, or recording the heartbeat of chick embryos (above), lie-detector expert Cleve Backster knows he faces the same kind of criticism that has always greeted those who throw science a "curve."

with tender loving care. Comedians made the expected jokes; *Dracaena massangeana* and *philodendron* became household words.

That is history now. To get caught up on what has been happening to Mr. Backster lately, we called on him again.

He is to be found in a suite of small rooms – crowded with scientific apparatus and plants – in an ordinary office building just off Times Square in New York. Here he pursues his vocation, which is teaching the technique of the lie-detector, or polygraph, to policemen and other interested parties . . . and his avocation, which is pure research into the secrets of nature.

We were ushered into a miniature room containing a metal desk with a polygraph countersunk in its top and several plants of the hotel-lobby variety. In his shirtsleeves, Backster sat at the desk, if "sit" is the word for someone who radiates energy and seems to be in constant motion. Now 47, he looks 10 years younger, has the body of an athlete and a disarming friendliness.

What had been happening? Well, quite a lot. He's been making speeches at universities, at Yale to an audience of linguists on nonverbal communication, at MIT on plant sensitivity, at Dartmouth to biologists and at North Carolina to botanists.

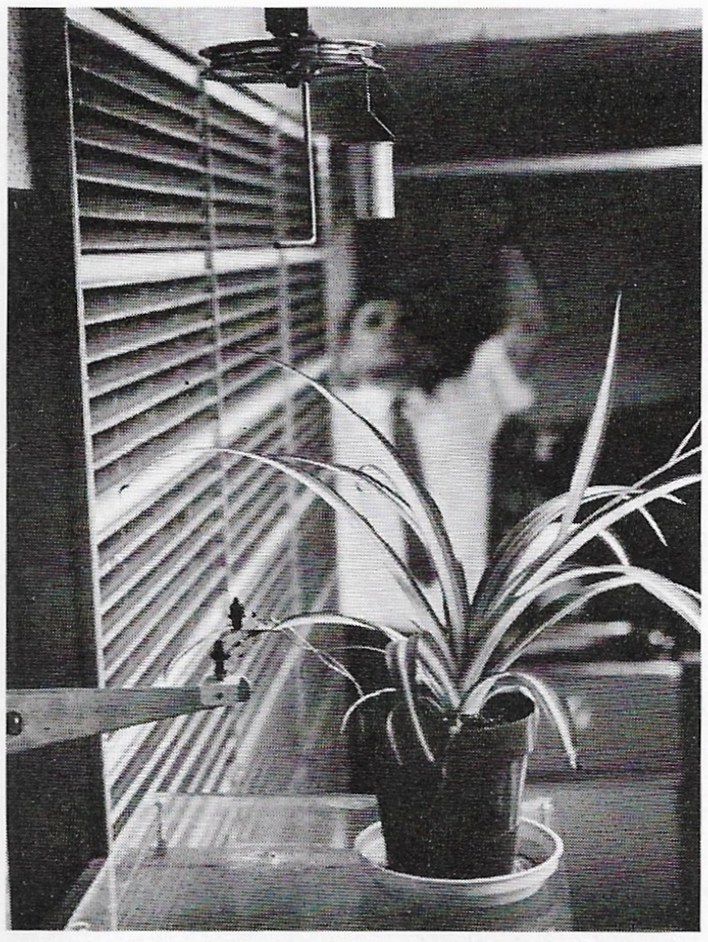
Between 25 and 30 universities are supposed to be "replicating" – duplicating – his major experiment, an extremely sophisticated one involving plants and brine shrimp. So far the results have not been published, but more than 7,000 scientists all over the world have written in for reports of his original research.

A foundation has expressed interest in subsidizing him. He has appeared on numerous radio and TV shows. And, most important, he has embarked on two more experiments that complement and expand his earlier work.

It took a little persuading to get him to talk about them since they are still "in progress." But we succeeded.

The first experiment is an effort to condition reflexes in plants much as the famous Russian scientist Pavlov did in dogs. Pavlov would ring a bell each time a dog ate; finally the mere ringing of the bell, without the food, would cause the dog to salivate. Any such effect, of course, depends on memory, and various observations have convinced Backster that his plants possess the equivalent of memory.

Plant memory of a sort was suggested in one of Backster's early experiments, in which six of his polygraph students participated. One was chosen by lot to destroy a plant. Keeping his identity from Backster, the criminal committed his deed secretly, with only another plant



Backster is convinced that his plants possess the equivalent of memory. To test his theory, he is applying Pavlovian methods to plants. Using electrified trolley wires so that his presence will not affect the test plants, Backster sends identical cups — one holding seeds, another worms, etc. — past each plant, bathing the plant in light each time a designated "conditioning cup" reaches it. Backster's hope: in time the plants will react to the conditioning cup without the light. In other words, that they will remember.

as witness. Then Backster hooked a polygraph up to the surviving plant, and the six suspects paraded into the room in turns. Five of them caused no noticeable reaction in the witness-plant, but the sixth, the killer, sent it into a tizzy.

As Backster is careful to point out, the plant could have been reflecting the guilt feelings of the culprit. Still, there's an even chance that it was *remembering* him, since the man was not exactly overwhelmed with guilt.

At any rate, to settle the memory question, Backster has begun applying Pavlovian methods to plants. He has rigged up some electrified trolley wires, which run down the hall and turn into the room where the plant of the experiment is stationed. Six small, identical cups—one holding seeds, another worms, a third insects, etc. – are attached to the trolley and circulate at intervals. One of the six is the object to which Backster wants to condition the plant, and he uses light as the stimulus.

For this purpose, he connected a light-conducting electrode to both the polygraph and the plant, bathing the latter with light each time the conditioning cup reaches it. Will the plant in time learn to pick out that one cup from among the six and react without the light? Backster thinks so, but his hopes will not be allowed to compromise the flawlessly automated experiment.

Eggs with feelings. His second experiment concerns eggs – chicken eggs. He once had a dog, which used to hang around the laboratory, and each night he would feed it a raw egg. Soon he noticed that the plants connected to the polygraph in a nearby room were reacting strenuously to the breaking of the egg. Then one night, wondering how the egg itself might be feeling, Backster attached his polygraph electrodes to *that*.

He got a nine-hour recording, part of which showed pulsations: the heartbeat of a chick embryo. By means of the egg carton, Backster checked back on the origin of the egg and learned that it had undoubtedly been fertilized (most store-bought eggs are not). The recorded heartbeat was accurate for the embryo. But when he dissected the egg, he was astonished to find that it contained no physical, circulatory structure to account for the pulsation.

"So," he asks, "what was I into? Was this some kind of entree into the origin-of-life sort of thing?"

What he's into now is a series of egg experiments involving the interplay between plants and eggs, as well as eggs and eggs (shake one and you get a reaction in another). He's trying to find out if eggs from the same hen react to each other in the same way as those from different hens, and so on.

Plants, he's found, don't react much to each other; their attunement is mostly to animal life, especially human life. Eggs on the other hand are mutually sensitive. He has already found that the destruction of an egg at one end of the laboratory will predictably cause great agitation in a second egg at the other end.

"When the egg knows you're going to break it or cook it," we asked, "does it react the same way the plant does?"

"Yes, it goes into a state of shock," he replied. "It faints. Plants do the same thing – and vegetables. Higher forms of animal life don't seem to get the point so quickly. The rabbi's prayer before the slaughtering of animals for kosher food gives notice of intent to kill and allows the animals to go into a configuration, which is like a state of shock. So the violence doesn't leave a residue in the animal cells which might be disagreeable to the taste."

Both the egg and Pavlovian plant studies are outgrowths of Backster's celebrated experiment with brine shrimp. After his earliest polygraph tracings of plants had revealed an apparently predictable reaction to the destruction of animal life, he went to extravagant lengths to verify his findings.

His subjects were three different plants, each closeted in its own room and separately attached to a polygraph. At the other end of the office was an apparatus of his invention which at random intervals dumped bowlsful of brine shrimp into simmering water. The experiment took place late at night, with no human being around, and the results were always the same. Each time the shrimp hit the boiling water the plants – separately, at the same moment, behind doors – registered an emotional reaction on the polygraph.

The implications of this experiment and of the two Backster now has underway are – well, staggering. And they don't stop with plants and eggs.

"We've also been working with cell cultures," he says, "and with amoeba, paramecium, fresh fruits and vegetables, mold cultures and blood samples. We find they all appear to have the same capability as plants. What I call 'primary perception.' Our experiments imply that total memory may go down to single-cell level, at least.

"It begins to seem that the memory capability – even in people – may possibly be at cell level. The brain may be just a switching mechanism, not necessarily the memory storage organ we've thought it to be. This is just speculation, of course, but now we have ways to check it out."

Perception and distance. Another thing Backster would like to check out is the relationship, if any, between primary perception and distance.

"I'm trying to get the space people to do something with a Mars probe," he says, "to show that distance doesn't limit primary perception."

He'd like to put (1) a plant, complete with polygraph, on a Mars probe and (2) the person attuned to it, the one who cares for it, in Ground Control, Houston. Then he would expose the

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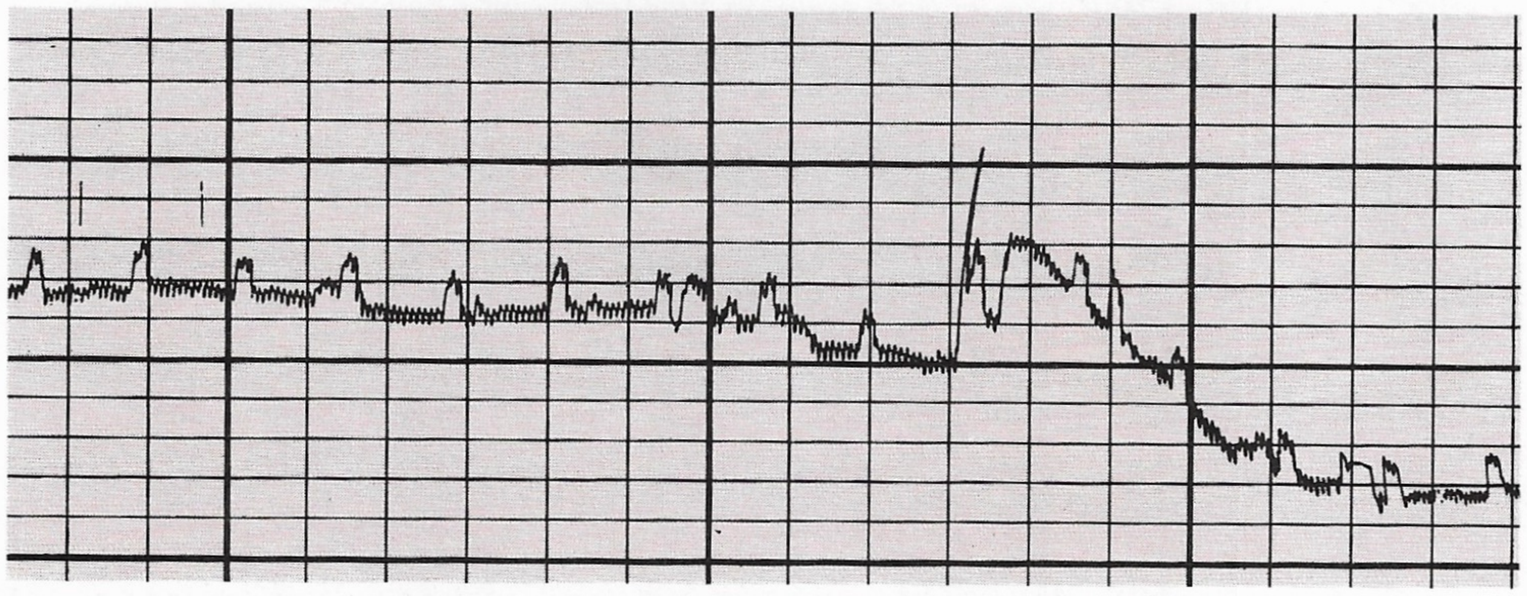

A nine-hour recording obtained by attaching polygraph electrodes to an egg turned up the heartbeat of a chick embryo. The egg had indeed been fertilized, but dissection revealed no physical, circulatory structure to account for the pulsation.

person to a programmed electric or emotional shock and have the plant's reaction telemetered back to earth.

"Ordinarily it takes a telemetered signal 6 to 6½ minutes to get to Mars and 6 to 6½ minutes back. The question would be how quickly we would receive the plant's reaction to the person's stimulus. If it comes back in 6 minutes, how did it get out there? Even if it takes 12 minutes, overall, it would be great to know that that enormous distance is no barrier to primary perception.

May not use time. "But I suspect that this signal would return in half the time. If it did, you'd have proof that there is a non-time-consuming form of communication, a phenomenon entirely beside or outside the electromagnetic spectrum."

He added, "We keep hearing about non-time-consuming communication from Eastern religious sources. They tell us that the universe is in balance; if it happens to go out of balance someplace, you can't wait a hundred light-years for the imbalance to be discovered and corrected. This non-time-consuming communication, this oneness among all living things, would be the answer."

NATIONAL WILDLIFE: *Going back to your laboratory experiments, do you feel that the attunement between a person and a plant is the same as between two people?*

CLEVE BACKSTER: I'm sure of it. But it's nothing we can explain in the context of our present scientific knowledge.

NW: *Don't you think it's easier between people?*

CB: No. People are too complicated. Plants are the ones that excel at this. We should take our lessons from the plants; they're simpler, more direct.

NW: *Does this have any effect on the plant itself – when it receives a strong emotion from someone else, for instance?*

CB: It changes the electrical potential discharge of the plant – this is what we're picking up. If we continually think derogatory thoughts about a plant, for example, or talk about it in a derogatory way, and if we praise another plant, we can get the first plant to do poorly, or even die, and the other to grow by leaps and bounds. This has been done by high school fair students all over the country. I've got a whole rash of correspondence from them.

NW: *What about poison plants everybody hates? They must have a terrible time.*

CB: (laughing) It's like crab grass. There are some plants that just won't listen.

NW: *But in your research now you're moving more into the egg and the animal, aren't you?*

CB: Well, I don't want to go too high, not really to the animal level because there are too many committed people there. People haven't committed themselves on plants. The botanists don't debate the levels of consciousness in plants because they haven't conceded any consciousness. When you get up to the egg level no one has committed himself about consciousness there, either. I know where to stop. I'm not interfering with committed people, so they're showing me nothing but pure interest – they're not on the defensive.

It falls to few men to throw science a real curve, as Cleve Backster at this writing appears to have done. Newton did it with an apple, Darwin with an ape, the Wright brothers, a flying machine. All of them risked ridicule, ostracism, or worse.

Backster is well aware of the hazards he faces; they're one of the reasons he leans over backward in his experiments to follow scientific methodology to the letter. And in his relations with various groups, especially organized science, he has charted his course with the same care.

"I use a very low-key approach with scientists," he explains. "'Gee whiz,' I say, 'look what happens when I hook electrodes to a plant. Can you help me?' And before they're through, they're hooked."

While we had been talking, Backster had attached a couple of electrodes to a leaf of the philodendron in the corner of his office, then turned on the desktop polygraph. Slowly the chart unreeled; the single pen moved eerily back and forth, recording the plant's electrical impulses. A few minutes later, while he was out of the room, two men came to the door, asking for him, and the plant greeted them with some emotion. It turned out they were police officers who dropped in to get caught up on their lie-detector homework.

Their arrival prompted us to ask Backster when he returned if plants had ever been used to participate in a real criminal investigation. He said they had, once, in a murder case.

Plants witnessed murder. "A girl was murdered in a large factory, and I was retained by the police to give lie detector tests to the prime suspects," he said. "A huge maintenance crew had been there on the evening the girl was working overtime. One of them could possibly have been in a position to commit the crime. Ordinary interrogation procedures presented a problem, because of the large number of suspects. As there were a couple of plants in the office where the body had been found, I suggested that we attach polygraph electrodes to them, and ask each of the workers into an adjoining office, one at a time. If the plants did their thing, the whole business might be expedited.

"The plants," he explained, "didn't spot the murderer, as the apparent solution to the crime did not involve a company employee." He added, with a smile, "It was interesting to note the reaction of the seasoned law enforcement officers, when I requested that they place the plants in a locked room each night to provide protective custody to the sole witnesses of the homicide." □